Appendix C
ALRE Malfunction and Corrosion Codes

ALRE MALFUNCTION CODES

Identifying and reporting correct ALRE Malfunction Codes is vital to the continuing equipment improvement and engineering analysis programs at NAVAIRWARCENACDIV Lakehurst.

Malfunction Code: 1st DIGIT (When Discovered)

0 - No defect; planned maintenance
1 - No defect; precautionary maintenance
2 - During operations
3 - During pre/post operational inspection
4 - During planned maintenance
5 - During non PMS inspection
6 - Removal/replacement directed by higher authority
7 - Equipment damaged by malfunction of associated equipment

Malfunction Code: 2nd DIGIT (Extent of Damage)

0 - No failure
1 - Catastrophic failure (failure damaged other equipment)
2 - Serious failure (unit mission degraded until repaired, i.e., C-2 CASREP)
3 - Major failure (equipment down until outside assistance repairs)
4 - Minor failure (equipment down until repair by ships force personnel)
5 - Degraded condition (equipment operable with limitation)

Malfunction Code: 3rd DIGIT (Type of Malfunction)

0 - No defect
1 - Corrosion
2 - Burned/overheated
3 - Broken, bent, deformed
4 - Out of adjustment
5 - Jammed, binding
6 - Failed NDI
7 - Abnormal operation
8 - Falls outside normal acceptable parameters
9 - Abnormal wear
A - Scored, gouged
B - Long A/G ram travel
C - Excessive catapult endspeed
D - Electrical/electronic component failure
E – Leaking

ALRE CORROSION CONTROL CODES

When using OMMS NG, corrosion control codes shall be annotated in the "Additional ALREMP Data" section of OPNAV 4790/160 and then entered into OMMS. This note also applies to ALRE shore test facilities documenting ALRE maintenance via micro-OMMS.

Specific requirements for documenting ALRE corrosion control data follows:

a. When corrosion is present, and is treated/removed during the course of normal scheduled or unscheduled maintenance, use of ALRE corrosion control codes will be mandatory. However, the third digit of the ALRE Malfunction Code will reflect the original discrepancy.

b. If corrosion is present and cannot be corrected during the course of normal scheduled or unscheduled maintenance because of time, operational, manpower, or material limitations/constraints, a separate ALRE MAF to defer correction of the corrosion discrepancy will be submitted. Use of corrosion codes on the original MAF will be mandatory.

c. When maintenance is performed specifically to correct a corrosion discrepancy, the third digit of the ALRE Malfunction Code will be "1" (corrosion). When this code is entered, use of the correct ALRE corrosion control codes will be mandatory.

NOTE
Corrosion prevention/control efforts shall be documented in conjunction with PMS and ALRE corrective maintenance actions. A separate ALRE MAF shall be initiated to document corrosion control that is not accomplished during a specific corrective or PMS maintenance action.

Corrosion Code: 1st DIGIT (Type Corrosion)

0 - No Corrosion Present

1 - Uniform Attack
Uniform attack is the most common type of corrosion and is characterized by uniform corrosion, or rusting, over an area of a metal surface. Corrosion on steel produces red or brown "rust", while corrosion of aluminum or zinc produces a white powdery corrosion product.

2 - Pitting Corrosion
Pitting corrosion is a type of localized corrosion. Pitting is characterized by the formation of "pits", holes or cavities in

the surface of the metal. The pits may be surrounded or covered by corrosion debris, so the actual pits may not be apparent until the debris is removed. Pitting corrosion is especially serious on piping or tubing because it may proceed until the pipe or tube leaks. Pitting corrosion occurs mostly on stainless steel and aluminum parts.

3 - Crevice Corrosion
Crevice corrosion occurs where there is a joint with a tight space or opening - a crevice - formed between at least two surfaces. Crevice corrosion is a localized form of corrosion, and is limited to the joint between the metals. The full extent of crevice corrosion may not be apparent until the parts are disassembled.

4 - Exfoliation (Flaking)
Exfoliation is a type of severe uniform corrosion. The corrosion has proceeded to the point where actual flakes of rust are loosened and can be removed. Exfoliation almost always occurs on steel, but may be found on aluminum.

Corrosion Code: 2nd DIGIT (Corrosion Action Taken)

0 - No Corrosion Control Action Required

1 - Remove corrosion; apply oil, grease, preservative.
No coating is applied other than a film of oil, grease, or a preservative such as "P1", "P2," or AMLGuard.

2 - Remove corrosion; apply temporary coating.
A temporary coating is one that is not prescribed in the applicable manual or MRC for correcting the corrosion problem. Temporary coatings are those which are not intended to be a permanent solution, just one which will be adequate until enough time or the proper materials (coating, etc.) are obtained. A temporary coating might be primer or other coating from a spray can.

3 - Remove corrosion; apply approved coating.
An approved coating is one that is specified by an MRC or a Corrosion Control Manual for the permanent solution to an identified corrosion problem. An approved coating may be a two-coat epoxy coating applied following careful surface preparation.

4 - Remove part for IMA/Depot corrosion control.

5 - No corrosion control action; deferral submitted.